

APRIL/MAY 2024

**DPH33/GPH33 — MICROPROCESSORS
AND MICROCONTROLLERS**

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer ALL questions.

1. Explain the role of arithmetic instructions in 8085.
2. What is BCD multiplication and how is it implemented in assembly language?
3. Define: I/O and Memory mapped I/O.
4. What is DAC and how is it interfaced?
5. Discuss the internal memory of the 8051 microcontroller.
6. How does the 8051 microcontroller interface with external memory.
7. What is the purpose of interrupt control.
8. Explain the difference between byte level and bit level logic operations.
9. Discuss the PUSH and POP operations.
10. What is a subroutine in microcontroller programming?



PART B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Discuss in detail the timing diagrams for memory read/write cycle in microprocessor 8085.

Or

- (b) Write an assembly language program for square and square root in microprocessor 8085.

12. (a) Discuss about the synchronous and asynchronous data transfer process.

Or

- (b) Explain the seven-segment display interface and its application.

13. (a) Discuss the input/output components of the 8051 microcontroller.

Or

- (b) Explain the operation of counters and timers in the 8051 microcontroller.

14. (a) Explain the instruction in byte level and bit level logic operations, and rotate and swap operations in microcontroller 8051.

Or

- (b) Write short notes on flags used in Arithmetic operations.

15. (a) Briefly explain the JUMP and CALL instruction.

Or

- (b) Explain the process of keyboard interfacing and with Microcontroller.

PART C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Write a detail account on the concept of the instructions in 8085, like data transfer, arithmetic, logical and branch.

17. Discuss the operation of a stepper motor with clockwise and anti-clockwise rotation in microprocessor 8085.

18. Elaborately discuss special function register in 8051 microcontrollers.

19. What are the different types of interrupts in microcontroller and briefly explain all interrupts.

20. Write of the process of D/A conversion, A/D conversion in microcontroller 8051.

